REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars:

Examiner interview summary

Applicant appreciates the courtesy extended to Applicant's representative during the personal interview conducted on February 20, 2007.

During the interview, Applicant's representative pointed out that neither of the cited references disclose or suggest a thinned chip mounted to a smart card (or other substrate or carrier) with its front side facing outward.

Applicant's representative explained that the "front" side is the component, or "active" side of the chip, and that Lang requires a chip to be placed with its active side against a contact carrier, not outward. This is apparent since after mounting the chip the chip is thinned by grinding the back side. Clearly, Lang does not arrange the chip to grind away the active or front side.

The examiner noted that, while the distinction was understood, without further clarification the claimed recitation of a "front side" could be construed according to which ever side of a chip faced outward, the "front" being construed simply as the outward side without regard to a component or "active" side.

It was agreed that clarification of the front side as an "active" side would define the present independent claims 18, 27, 33, and 39 over the cited references. The examiner also requested some clarification in the specification commensurate with such a claim amaendment.

In the claims

Independent claims 18, 27, 33, and 39 have been amended to clarify that the "front side" of the chip (which is oriented outward from the smart card according to these claims) is an active side.

This amendment is supported in the original specification at page 5, which states that a wafer is glued "with its front side having components 2" to a carrier substrate. Further, in the second paragraph of page 6 the component surface is referred to as "the active surface." Therefore, it is clear from the original specification that the front side is an active, or component, side of the chip or wafer and therefore the reference to an "active front side" is made in the interest of clarification, but does not constitute new matter.

In the specification

The specification has been amended to further clarify that the front side (now referred to as the active front side) is an active, or component side, and to provide literal antecedent basis for the amended claims.

It is respectfully submitted that it is clear from the original specification that a component side of a chip or wafer is referred to both as a front side (at page 5) and as an active surface (in the second paragraph of page 6). Therefore, it is clear that the front side and the active surface both refer to the component side of the wafer, and accordingly "active side" or "active front side" both refer to the front or component side of the wafer. Accordingly, no new matter is added.

Rejection of claims 18, 27, 33, and 39 under 35 U.S.C. § 103(a)

Claims 18, 27, 33, and 39 presently stand rejected as being unpatentable over Lang et al (U.S. 6,046,073) in view of Grupen-Shumansky (U.S. 5,268,065). This rejection is respectfully traversed for at least the following reasons.

Claims 18 and 33 set forth a method for incorporating a chip into a smart card, wherein a chip having an active front and a back side, the chip being thinned from the back side, is applied to a surface of the smart card with the front side of the chip facing outwardly from the smart card surface. Stated differently, the thinned back side of the chip is applied to the smart card surface. Once the chip is applied to the smart card surface, conductive paths are provided on the card and the chip.

Lang and Grupen-Shumansky fail to form a prima facie basis of obviousness of claims 18 and 27 because Lang and Grupen-Shumansky together fail to disclose or suggest each and every element set forth in claims 18 and 27, and because there is no motivation or suggestion to combine the references.

Lang teaches mounting a semiconductor chip on contact surfaces, with the active side (front side) applied to the contact surfaces. Therefore, the chip is applied to a contact surface with its active (front) side facing inward, not outward.

The chip is then, in a second step, thinned by removing silicon from the exposed rear side of the chip by a plasma etching process. (see *Lang*; col. 1, lines 49-61; col. 2, lines 6-22; col. 3, lines 39-46).

The contact surfaces are a part of a lead frame. (see *Lang*; col. 1, lines 66-67; col. 2, line 67; col. 3, lines 16-18). According to Lang, the chip is placed into the lead frame (and therefore in contact with the contact surfaces) prior to the plasma etching thinning process so that "since the individual chips are already fitted to a mount substrate, the thinness does not result in any problems in further handling." (*Lang*; col. 2, lines 20-22).

A basic difference between Lang and claims 18 and 33 of the present application is that, according to the present invention, the chip is mounted with its active side facing outward, not inward. Further, the card and chip, according to the present invention, are provided with conductive paths only ***after*** the thinned chip has been applied to the surface of the smart card. This is in clear contradistinction to the teaching of Lang, since according to Lang it is important to first fit the chip to the contact surfaces and thereafter to carry out a thinning by etching the rear side of the chip.

Grupen-Shumansky discloses a method for thinning a semiconductor wafer. As shown in the figures, back side 13 of semiconductor wafer 11 undergoes a mechanical grinding in order to thin the chip. However, Grupen-Shumansky provides no teaching or suggestion of a smart card, or of any method for applying a chip to a smart card, or to any method of applying conductive paths to a chip and a smart card surface.

Lang already discloses a thinning process, so there is no reason for persons skilled in the art to seek a thinning process to supplement Lang's teachings. Even combining the teachings of Lang and Grupen-Shumansky, however, does not result in any teaching or suggestion of applying a thinned chip with its active side facing outward, and after the chip is applied to the smart card surface, providing conductive paths on the card and the chip.

Because neither Lang, nor Grupen-Shumansky, nor any combination thereof discloses or suggests applying a thinned chip to a smart card with its active side facing outward, and after the chip is applied to the smart card surface, providing conductive paths on the card and the chip, these references fail to form a prima facie case of obviousness of claims 18 and 33, and therefore it is respectfully submitted that claims 18 and 33 are allowable over the cited references.

Further, it is respectfully submitted that claims 27 and 39, which each recite a smart card generally corresponding to the method of claims 18 and 33, are allowable for the same reasons as claims 18 and 33 since claims 27 and 39 each recite that a thinned chip is disposed on a smart card surface with its active side facing outward, and that conductive paths are applied to the outside surface of the chip and smart card.

Accordingly, withdrawal of the rejection is requested.

Rejection of claims 20-22, 30-32, 35-38, and 42-51 under 35 U.S.C. § 103(a)

Claims 20-22, 30-32, 35-38, and 42-45, and 49-51 presently stand rejected as being unpatentable over Lang and Grupen-Shumansky, and further in view of Kohama et al (U.S. 6,412,701). This rejection is respectfully traversed for at least the following reasons.

Claims 46-48 have been cancelled, rendering their rejection moot.

With respect to claims 20-22, 30-32, 35-38, and 42-45, and 49-51, it is respectfully submitted that these claims are allowable for the same reasons set forth with respect to claims 18, 27, 33, and 39. Claims 20-22, 30-32, 35-38, and 42-45, and 49-51 depend from

independent claims 18, 27, 33, and 39, and it is respectfully submitted that Kohama fails to supplement the deficiencies discussed above with respect to claims 18, 27, 33, and 39.

Conclusion

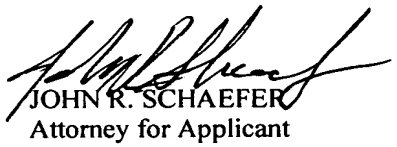
In view of the amendments to the claims, and in further view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is requested that claims 18, 20-22, 27, 30-33, 35-39, and 49-51 be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's attorney, the Examiner is invited to contact the undersigned at the numbers shown.

Respectfully submitted,

BACON & THOMAS, PLLC
625 Slaters Lane, Fourth Floor
Alexandria, Virginia 22314-1176
Phone: (703) 683-0500

Date: February 28, 2007



JOHN R. SCHAEFER
Attorney for Applicant
Registration No. 47,921